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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/083,410	02/27/2002	Takuya Saeki	43496	7390

1609 7590 02/17/2004

ROYLANCE, ABRAMS, BERDO & GOODMAN, L.L.P.
1300 19TH STREET, N.W.
SUITE 600
WASHINGTON,, DC 20036

EXAMINER

MULLIS, JEFFREY C

ART UNIT PAPER NUMBER

1711

DATE MAILED: 02/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/083,410	Applicant(s) SAEKI ET AL.	
	Examiner Jeffrey C. Mullis	Art Unit 1711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

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All remaining rejections and/or objections follow.

Claims 1-23 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention.

It is not clear what is intended by applicants' phrases "graft polymers" and "at least two graft polymers". While these phrases would ordinarily be clear to those skilled in the art, these phrases are not clear when viewed in light of applicants' specification. Note for instance Example 1 in which "two graft polymers" are said to be produced despite the fact that the starting materials which are polyethers (apparently derivatized with maleic anhydride) have molecular weights of about 500 (as can be deduced by the reaction stoichiometry) and which are polymerized to a molecular weight of 6600 and would therefore have on the order of 10 chains of polyethers combined (in that the amount of acrylic acid is insignificant contained to the mass of the polyethers). As 10 molecules of polyether are apparently combined based on the disclosed molecular weight, the polyether chains could not be said to be separate graft polymers. Furthermore derivatization of a macromolecular material (such as in the instant case a polyether) by an unsaturated group and

polymerization of the monomeric material is a process known in the art to produce comb polymers and generally the backbone material is viewed as the unsaturated monomeric material utilized and not the macromolecular material. Applicants' lexicography is confusing and appears to be contradictory to that used in the art in this regard given that applicants refer to the backbone as the polyether rather than referring to the polyether as a side chain. While applicants possibly acknowledge the fact that sometimes two polyether chains are combined in the product at page 8 lines 4-13, nonetheless Example 1 refers to the production of "two graft polymers" despite the fact that the stoichiometry of Example 1 would require that different polyether chains be combined into a single molecule (given that the polyethers utilized at molecular weights of very roughly 500 while the product has a molecular weight of 6600 and very little additional material aside from polyethers themselves are utilized in the process which would account for the increased molecular weight). Applicants' use of the terms "graft polymer" and "graft polymers" is therefore unclear. Applicants' meaning of the term "main chain" is also unclear given that the main chain comb polymer is generally viewed as the monomeric material which polymerizes (in the instant case acrylate). Admittedly in applicants' case very

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little acrylate is used but given the fact that the art generally recognizes the monomeric material as the backbone, it is unclear what applicants intend. Applicants of course are free to be their own lexicographer even in cases where such lexicography is contradictory to that utilized in the art, but nonetheless applicants' lexicography must be clear.

Claim 23 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 23 recites a definition, namely that the number of carbon atoms in said end structural unit is defined as 0 and the polyether includes only hydroxy terminal end structural units and given that said definition applies to all the claims, it cannot be said that claim 23 further limits any preceding claim.

Applicants' remarks are moot since all previous rejections and/or objections have been withdrawn.

This Office action is not being made FINAL.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey

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Mullis whose telephone number is (571) 272-1075. The examiner can normally be reached on Monday-Friday from 9:30 to 6:30.

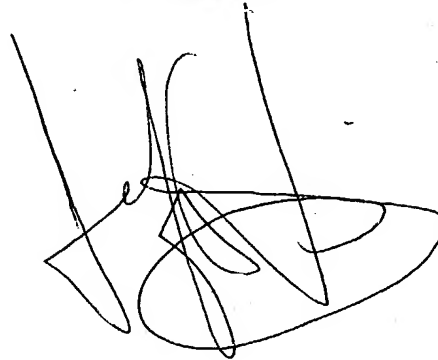
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck, can be reached on (571) 272-1078. The fax phone number for this Group is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-0994.

J. Mullis:cdc

February 8, 2004

Jeffrey Mullis
Primary Examiner
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A handwritten signature in black ink, appearing to be 'Jeffrey Mullis', written over the typed name and title.